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Inorganic Fertilizer Materials and Related Products

1988

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SUMMARY OF FINDINGS

United States production of sulfuric acid in 1988 totaled 42,140.8 thousand short tons (100 percent H_2SO_4), approximately 7 percent above the 1987 figure of 39,256.4 thousand short tons. Value of shipments (including interplant transfers) in 1988 amounted to $615.3 million, as compared to the 1987 value of $561.6 million.

Value of shipments of synthetic ammonia, nitric acid, and ammonium compounds increased 18 percent to $2,437.3 million in 1988 from the 1987 level of $2,059.6 million. Shipments of urea increased 32 percent to $620.3 million in 1988, and shipment of phosphoric acid increased nearly 13 percent to $1,297.0 million.

Production of superphosphate and other phosphatic fertilizer materials for 1988 increased 12 percent to 7,970.0 thousand short tons (100 percent P_2O_5). Value of shipments amounted to $2,542.0 million in 1988, as compared to the 1987 value of $2,090.6 million.

The statistics in this report are based on surveys of producers of sulfuric acid and other inorganic fertilizer chemicals. The figures represent total production and shipments by U.S. manufacturers of inorganic fertilizer materials. Estimates are included for companies whose reports were not received in time for tabulation.

A description of the survey methodology and related information appears on page 14.

Prior to 1985, figures for the nitrogenous and phosphatic fertilizer materials were published in Current Industrial Report MA28A, *Inorganic Chemicals.*

Table 1. SHIPMENTS AND PRODUCTION OF SULFURIC ACID: 1984 TO 1988

(Quantity in thousands of short tons of 100% H_2SO_4; value in thousands of dollars)

Product code	Product description	Year	Total production	Total shipments, including interplant transfers: Quantity	Total shipments, including interplant transfers: Value (f.o.b. plant)	Commercial shipments[1]: Quantity	Commercial shipments[1]: Value (f.o.b. plant)	Consumed (in production) at plant
2819(3)	Sulfuric acid, gross (new and fortified)	1988	42,140.8	12,636.4	615,348	29,504.4	386,674	12,636.4
		1987	39,256.4	11,284.1	561,639	27,972.3	368,879	11,284.1
		1986	35,991.4	10,884.4	538,913	25,107.0	347,048	10,884.4
		1985	34,889.8	11,434.5	563,904	23,455.3	329,892	11,434.5
		1984	41,892.7	12,248.3	603,794	29,644.4	335,988	12,248.3
2819(3) 11	Oleum (under 40 percent)	1988	1,431.8	912.8	63,424	518.7	41,134	913.1
		1987	1,432.1	988.5	60,280	457.8	36,836	974.3
		1986	1,369.2	966.1	58,990	426.7	37,060	971.0
		1985	1,357.4	924.7	53,347	466.4	32,407	930.1
		1984	1,333.2	872.5	54,837	483.4	32,262	935.8
2819(3) 13	Oleum (40 percent)	1988	31.5	(D)	(D)	(D)	(D)	(D)
		1987	40.8	(D)	(D)	(D)	(D)	(D)
		1986	62.0	(D)	(D)	(D)	(D)	(D)
		1985	45.7	(D)	(D)	(D)	(D)	(D)
		1984	80.7	(D)	(D)	(D)	(D)	(D)
2819(3) 17	Oleum (over 40 percent)	1988	206.6	(D)	(D)	(D)	(D)	(D)
		1987	163.2	(D)	(D)	(D)	(D)	(D)
		1986	117.2	(D)	(D)	(D)	(D)	(D)
		1985	146.4	(D)	(D)	(D)	(D)	(D)
		1984	174.8	(D)	(D)	(D)	(D)	(D)
2819(3) 31	Other than oleum[2]	1988	40,469.9	10,487.6	536,424	9,345.6	459,152	10,619.6
		1987	37,615.3	10,207.8	487,836	9,045.5	440,909	27,752.4
		1986	34,435.0	9,868.3	467,312	8,437.1	427,377	24,809.6
		1985	33,330.4	10,732.1	486,961	8,621.8	446,234	27,699.7
		1984	40,294.5	11,211.2	533,527	9,868.8	471,316	29,497.4
2819(3) —	Sulfuric acid produced through decomposition of alkylation acid and other spent acids, including sulfuric acid sludge	1988	2,407.3	(X)	(X)	(X)	(X)	(X)
		1987	2,411.8	(X)	(X)	(X)	(X)	(X)
		1986	2,294.1	(X)	(X)	(X)	(X)	(X)
		1985	2,033.0	(X)	(X)	(X)	(X)	(X)
		1984	1,349.7	(X)	(X)	(X)	(X)	(X)
2819(3) 71	Spend acid used for fortification in contact units and included in above figures[3]	1988	(X)	(X)	(X)	(X)	(X)	170.5
		1987	(X)	(X)	(X)	(X)	(X)	150.6
		1986	(X)	(X)	(X)	(X)	(X)	191.7
		1985	(X)	(X)	(X)	(X)	(X)	166.0
		1984	(X)	(X)	(X)	(X)	(X)	136.0

(D) Data withheld to avoid disclosing figures for individual companies. (X) Not applicable.

[1] Represents total shipments minus interplant transfers.
[2] Figures for other than oleum include chamber process acid.
[3] Spent acid fortified by the addition of sulfur trioxide.

Address inquiries concerning these figures to U.S. Department of Commerce, Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Gisela B. Hoffman, (301) 763-7807.

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Table 2. PRODUCTION AND SHIPMENTS OF INORGANIC FERTILIZER CHEMICALS: 1984 TO 1988

(Quantity in short tons; value in thousands of dollars)

Product code	Chemical and basis	Year	Total production (quantity)	Total shipments including interplant transfers		Interplant transfers	
				Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
28731 —	Synthetic ammonia, nitric acid, and ammonium compounds....	1988	(X)	(X)	2,437,308	(X)	(X)
		1987	(X)	(X)	2,059,645	(X)	(X)
		1986	(X)	(X)	2,064,088	(X)	(X)
		1985	(X)	(X)	3,024,818	(X)	(X)
		1984	(X)	(X)	3,101,667	(X)	(X)
28731 11	Nitric acid (100% HNO_3).....	1988	[1]7,990,947	695,826	76,212	(D)	(D)
		1987	[1]7,225,127	600,237	69,067	109,294	12,482
		1986	[1]6,736,261	513,915	61,198	(D)	(D)
		1985	[1]7,645,113	565,376	64,319	(D)	(D)
		1984	[1]7,797,851	642,035	80,892	(D)	(D)
	Ammonia, synthetic anhydrous (100% NH_3)[2].....	1988	16,821,409	9,630,410	1,010,497	2,015,279	199,942
		1987	16,097,709	9,749,299	959,438	1,988,625	184,903
		1986	14,487,469	8,789,301	889,747	2,041,040	192,716
		1985	17,318,972	10,516,245	1,468,566	1,812,178	246,314
		1984	16,701,603	9,535,546	1,453,171	1,850,702	179,209
28731 30	Fertilizer use.....	1988	15,287,823	8,638,716	895,051	1,347,515	123,756
		1987	14,621,355	8,828,007	858,705	1,454,395	126,454
		1986	13,201,686	7,991,020	818,846	1,571,337	150,484
		1985	15,844,242	9,585,009	1,329,043	1,372,059	179,102
		1984	15,081,226	8,495,885	1,305,096	1,349,807	123,168
28731 32	Other uses.....	1988	1,533,586	991,694	115,446	667,764	76,186
		1987	1,476,354	921,292	100,733	534,230	56,449
		1986	1,285,583	798,281	80,901	469,703	42,232
		1985	1,474,730	931,236	139,523	440,119	67,212
	Ammonium compounds:	1984	1,620,377	1,039,661	148,075	500,895	56,041
	Nitrate:						
28731 50	Original solution (100% NH_4 NO_3)[3].....	1988	7,503,755	(X)	(X)	(X)	(X)
		1987	6,546,683	(X)	(X)	(X)	(X)
		1986	6,091,125	(X)	(X)	(X)	(X)
		1985	7,149,230	(X)	(X)	(X)	(X)
		1984	7,164,620	(X)	(X)	(X)	(X)
	Fertilizer use (100% NH_4 NO_3):						
	Solution.....	1988	3,408,240	(D)	(D)	-	-
		1987	2,889,549	(D)	(D)	-	-
		1986	2,750,233	(D)	(D)	(D)	(D)
		1985	3,421,668	(D)	(D)	(D)	(D)
		1984	2,980,199	528,710	61,997	(D)	(D)
28731 52	Solution produced for sale.....	1988	259,384	185,369	18,489	-	-
		1987	270,086	211,947	24,186	-	-
		1986	294,828	250,300	28,711	-	-
		1985	394,672	353,076	45,110	-	-
		1984	385,388	332,081	38,029	-	-
28731 54	Solution produced for consumption.....	1988	3,148,856	(D)	(D)	-	-
		1987	2,619,463	(D)	(D)	-	-
		1986	2,455,405	(D)	(D)	(D)	(D)
		1985	3,026,996	(D)	(D)	(D)	(D)
		1984	2,594,811	196,629	23,968	(D)	(D)
28731 51	Solid.....	1988	2,217,338	2,252,336	245,278	(D)	(D)
		1987	1,788,672	2,017,438	192,430	(D)	(D)
		1986	1,780,793	1,837,385	204,161	(D)	(D)
		1985	2,428,704	2,299,522	288,559	(D)	(D)
		1984	2,539,439	2,462,240	345,655	(D)	(D)
28731 53	Explosives and other uses (solution and solid).....	1988	1,849,170	1,586,217	163,101	(D)	(D)
		1987	1,713,192	1,406,237	145,243	24,729	2,440
		1986	1,437,305	1,110,355	137,149	(D)	(D)
		1985	1,276,851	1,090,331	142,315	(D)	(D)
		1984	1,307,822	947,837	125,738	(D)	(D)
28731 55	Nitrogen solutions (100% N) (including mixtures containing urea).....	1988	2,901,879	2,948,822	468,647	(D)	(D)
		1987	2,384,548	2,405,377	444,711	(D)	(D)
		1986	2,275,078	2,243,137	492,433	(D)	(D)
		1985	2,655,557	2,498,570	738,296	(D)	(D)
		1984	2,894,427	2,656,153	783,482	(D)	(D)
28731 65	Solutions containing ammonia[4].....	1988	169,636	166,970	39,057	(D)	(D)
		1987	143,260	138,232	26,665	(D)	(D)
		1986	197,576	200,049	39,805	(D)	(D)
		1985	235,153	195,942	53,389	(D)	(D)
		1984	340,538	282,069	68,177	(D)	(D)
28731 66, 67	Ammonium nitrate/urea solutions and all other two-component products[5].....	1984	2,553,889	2,374,084	715,305	(D)	(D)

See footnotes at end of table.

Table 2. PRODUCTION AND SHIPMENTS OF INORGANIC FERTILIZER CHEMICALS: 1984 TO 1988--Continued

(Quantity in short tons; value in thousands of dollars)

Product code	Chemical and basis	Year	Total production (quantity)	Total shipments including interplant transfers		Interplant transfers	
				Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
	Nitrogen solutions (100% N) (including mixtures containing urea)--Continued						
28731 66	Ammonium nitrate/urea solutions[4 5]	1988	2,732,243	2,781,852	629,590	(D)	(D)
		1987	2,241,288	2,267,145	418,046	(D)	(D)
		1986	2,077,502	2,043,088	452,628	(D)	(D)
		1985	2,420,404	2,302,628	684,907	(D)	(D)
28731 73	Ammonium nitrate/calcium nitrate solutions	1988	(4)	(4)	(4)	-	-
		1987	(4)	(4)	(4)	-	-
		1986	(4)	(4)	(4)	-	-
28731 67	All other two-component products	1988	-	-	-	-	-
		1987	-	-	-	-	-
		1986	-	-	-	-	-
		1985	(4)	(4)	(4)	(4)	(4)
	Ammonium sulfate, synthetic and byproduct other than coke oven byproduct (100% $(NH_4)_2SO_4$)[2]	1988	2,332,777	2,281,738	140,520	-	-
		1987	2,189,075	1,986,427	108,582	(D)	(D)
		1986	2,080,106	2,141,155	115,246	(D)	(D)
		1985	2,093,213	2,008,032	148,362	(D)	(D)
		1984	2,066,506	1,898,769	136,034	(D)	(D)
28731 56	Synthetic	1988	(D)	(D)	(D)	-	-
		1987	(D)	(D)	(D)	(D)	(D)
		1986	(D)	(D)	(D)	(D)	(D)
		1985	(D)	(D)	(D)	(D)	(D)
		1984	(D)	(D)	(D)	(D)	(D)
28731 58	Byproduct, other than coke oven	1988	(D)	(D)	(D)	-	-
		1987	(D)	(D)	(D)	-	-
		1986	(D)	(D)	(D)	-	-
		1985	(D)	(D)	(D)	-	-
		1984	(D)	(D)	(D)	(D)	(D)
	Byproduct, coke oven[6]	1988	(X)	(X)	(X)	(X)	(X)
		1987	(X)	(X)	(X)	(X)	(X)
		1986	(X)	(X)	(X)	(X)	(X)
		1985	(X)	(X)	(X)	(X)	(X)
		1984	269,887	(X)	(X)	(X)	(X)
28731 69	Other ammonium compounds (including ammonium chloride, gray and white)	1988	(X)	(X)	111,822	(X)	(X)
		1987	(X)	(X)	r101,057	(X)	(X)
		1986	(X)	(X)	r100,712	(X)	(X)
		1985	(X)	(X)	121,935	(X)	(X)
		1984	(X)	(X)	114,698	(X)	(X)
28732 --	Urea (100%)	1988	7,914,075	5,079,727	620,258	(D)	(D)
		1987	7,433,423	5,019,292	469,450	(D)	(D)
		1986	6,263,872	3,894,126	390,020	(D)	(D)
		1985	6,974,742	4,301,468	541,987	(D)	(D)
		1984	7,751,663	5,050,955	675,257	(D)	(D)
	For fertilizer use:						
28732 16	Solutions produced as intermediate in nitrogen solutions	1988	2,609,761	44,899	6,434	(D)	(D)
		1987	2,470,828	46,832	5,524	-	-
		1986	2,245,656	34,127	4,164	-	-
		1985	2,514,310	49,045	8,030	-	-
		1984	2,580,374	26,964	4,449	-	-
28732 18	Solid	1988	4,408,902	4,164,732	504,818	(D)	(D)
		1987	4,139,545	4,172,530	380,829	(D)	(D)
		1986	3,324,058	3,185,163	308,043	(D)	(D)
		1985	3,796,300	3,631,570	440,229	-	-
		1984	4,535,931	4,395,880	571,291	(D)	(D)
	Other uses:						
28732 21	Feed (solid and solution)	1988	372,038	372,091	49,336	-	-
		1987	308,518	308,829	34,699	-	-
		1986	232,392	247,009	31,239	-	-
		1985	284,550	286,673	46,503	-	-
		1984	300,926	295,605	48,396	-	-
28732 22	All other (solid and solution)	1988	523,374	498,005	59,670	-	-
		1987	514,532	491,101	48,398	(D)	(D)
		1986	461,764	427,827	45,974	(D)	(D)
		1985	379,582	334,180	47,225	(D)	(D)
		1984	334,432	332,506	51,121	(D)	(D)
28741 --	Phosphoric acid (100% P_2O_5)	1988	11,677,087	4,210,154	1,297,004	1,390,760	382,550
		1987	10,618,566	4,314,657	1,151,772	1,464,355	353,163
		1986	9,577,639	3,786,382	1,075,832	838,196	214,465
		1985	10,606,922	4,006,853	1,139,621	578,311	133,751
		1984	11,393,940	4,099,380	1,173,055	710,176	133,630
28741 81	Thermal	1988	617,674	219,300	142,606	(D)	(D)
		1987	614,352	218,394	130,477	(D)	(D)
		1986	595,906	207,066	132,794	(D)	(D)
		1985	599,534	228,938	148,775	(D)	(D)
		1984	678,900	247,588	172,011	6,697	4,394

See footnotes at end of table.

Table 2. PRODUCTION AND SHIPMENTS OF INORGANIC FERTILIZER CHEMICALS: 1984 TO 1988--Continued

(Quantity in short tons; value in thousands of dollars)

Product code	Chemical and basis	Year	Total production (quantity)	Total shipments including interplant transfers		Interplant transfers	
				Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
	Phosphoric acid (100% P_2O_5)--Continued						
28741 85	Wet	1988	11,059,413	3,990,854	1,154,398	(D)	(D)
		1987	10,004,214	4,096,263	1,021,295	(D)	(D)
		1986	8,981,733	3,579,316	943,038	(D)	(D)
		1985	10,007,388	3,777,915	990,846	(D)	(D)
		1984	10,715,040	3,851,792	1,001,044	703,479	129,236
	By use:						
28741 86	Fertilizer	1988	10,632,237	(D)	(D)	(D)	(D)
		1987	9,597,795	(D)	(D)	(D)	(D)
		1986	8,505,672	(D)	(D)	(D)	(D)
		1985	9,475,044	3,544,624	932,967	(D)	(D)
		1984	10,114,678	(D)	(D)	(D)	(D)
28741 87	Feed and other	1988	427,176	(D)	(D)	(D)	(D)
		1987	406,419	(D)	(D)	(D)	(D)
		1986	476,061	(D)	(D)	(D)	(D)
		1985	532,344	233,291	57,879	(D)	(D)
		1984	600,362	(D)	(D)	(D)	(D)
	By grade:						
28741 88	Ortho (less than 65% P_2O_5)	1988	9,367,566	2,425,042	650,065	(D)	(D)
		1987	8,456,053	2,683,486	609,972	(D)	(D)
		1986	7,431,583	2,182,825	518,428	(D)	(D)
		1985	8,402,525	2,355,478	542,738	(D)	(D)
		1984	9,351,032	2,722,331	646,454	703,479	129,236
28741 89	Super (65% or more P_2O_5)	1988	1,691,847	1,565,812	504,333	-	-
		1987	1,548,161	1,412,777	411,323	-	-
		1986	1,550,150	1,396,491	424,610	-	-
		1985	1,604,863	1,422,437	448,108	-	-
		1984	1,364,008	1,129,461	354,590	-	-
28742 —	Superphosphate and other phosphatic fertilizer materials (100% P_2O_5)	1988	7,969,955	7,814,459	2,541,988	r28,382	9,568
		1987	7,125,497	7,148,246	2,090,625	r38,856	12,065
		1986	6,108,124	6,126,210	1,760,423	211,794	37,683
		1985	7,653,180	7,695,070	2,380,893	237,848	71,951
		1984	8,031,908	7,758,887	2,667,860	291,450	101,338
28742 15	Normal and enchriched superphosphates	1988	69,873	r20,875	r5,358	(D)	(D)
		1987	64,607	r21,758	r6,305	12,033	r3,493
		1986	65,192	23,720	5,816	11,754	3,230
		1985	100,343	36,114	8,792	17,247	4,254
		1984	126,817	51,907	11,697	17,128	3,255
28742 41	Concentrated superphosphates	1988	944,898	939,415	249,898	-	-
		1987	956,010	947,552	229,031	-	-
		1986	971,899	1,029,163	224,976	(D)	(D)
		1985	1,190,037	1,213,977	292,969	(D)	(D)
		1984	1,123,838	1,107,951	283,155	(D)	(D)
28742 51	Monoammonium phosphates	1988	1,086,773	1,068,516	380,951	(D)	(D)
		1987	949,590	947,057	284,001	(D)	(D)
		1986	740,518	735,425	208,243	(D)	(D)
		1985	911,132	898,205	280,735	(D)	(D)
		1984	843,677	824,514	265,431	(D)	(D)
28742 52	Diammonium phosphates	1988	5,757,351	5,677,371	1,856,618	(D)	(D)
		1987	5,058,845	5,138,663	1,533,733	(D)	(D)
		1986	4,221,661	4,234,116	1,265,811	(D)	(D)
		1985	5,339,603	5,440,295	1,740,338	(D)	(D)
		1984	5,803,862	5,655,313	2,052,969	(D)	(D)
28742 55	Other ammonium phosphates	1988	[7]111,060	[7]108,282	[7]49,163	(D)	(D)
		1987	[7]96,445	[7]93,216	[7]37,555	(D)	(D)
		1986	[7]108,854	[7]103,786	[7]55,577	(D)	(D)
		1985	[7]112,065	[7]106,479	[7]58,059	(D)	(D)
		1984	[7]133,714	[7]119,202	[7]54,608	(D)	(D)
28742 61	Other phosphatic fertilizer materials	1988	(7)	(7)	(7)	(7)	(7)
		1987	(7)	(7)	(7)	(7)	(7)
		1986	(7)	(7)	(7)	(7)	(7)
		1985	(7)	(7)	(7)	(7)	(7)
		1984	(7)	(7)	(7)	(7)	(7)

- Represents zero. (D) Data withheld to avoid disclosing figures for individual companies. rRevised by 5 percent or more from previously published figures. (X) Not applicable.

[1]Include unspecified amounts of nitric acid produced but not withdrawn from the system.
[2]Excludes data for byproduct ammonia liquor and ammonium sulfate published by the Department of Energy.
[3]Represents total amount of original solution produced, including amounts used for fertilizer, explosive, and other uses and amounts consumed in manufacturing other products such as nitrogen solutions (product code 28731 55).
[4]Starting with 1985, "All other two-component products" (28731 67) is combined with "Solutions containing ammonia" (28731 65) to avoid disclosing figures for individual companies.
[5]Prior to 1985, "All other two-component products" (28731 67) was combined with "Solutions containing ammonium nitrate/urea" (28731 66) to avoid disclosing figures for individual companies.
[6]Source: U.S. Department of Energy. (Figures are not available after 1984.)
[7]"Other phosphatic fertilizer materials" (28742 61) is combined with "Other ammonium phosphates" (28742 55) to avoid disclosing figures for individual companies.

Table 3. QUANTITIES OF SELECTED INORGANIC FERTILIZER CHEMICALS PRODUCED AND CONSUMED IN SAME PLANT: 1984 TO 1988

Product code	Product description	Basis	Consumed in producing plants (short tons)				
			1988	1987	1986	1985	1984
28731 11	Nitric acid	100% NHO_3	7,434,626	6,736,010	6,033,256	7,162,112	7,297,517
28731 30 28731 21	Ammonia (synthetic) anhydrous	100% NH_3	7,387,957	6,718,080	5,991,707	6,928,191	7,360,081
	Ammonium nitrate:						
28731 52 28731 54	Fertilizer use solution[1]	100% NH_4NO_3	3,193,558	2,632,759	2,585,162	2,423,121	1,807,273
28731 51 28731 53	Other uses (solution and solid)	...do	264,325	268,174	323,853	261,543	333,963
	Phosphoric acid	100% P_2O_5	7,527,795	6,686,823	5,689,719	6,754,819	7,032,305
28741 81	Thermal	...do	410,343	407,664	393,387	390,681	449,846
28741 85	Wet	...do	7,117,452	6,279,159	5,296,332	6,364,138	6,582,459

[1] Excludes amount converted to solid nitrate.

Table 4. PRODUCTION OF INORGANIC FERTILIZER CHEMICALS, BY STATE: 1988 AND 1987

(Short tons)

Geographic area	Nitric acid (100% HNO_3) (2873111)		Ammonia synthetic anhydrous (100% NH_3) (2873130 and 132)		Phosphoric acid (100% P_2O_5) (2814181 and 185)		Urea (100% urea) (2873216 218, 221, and 222)		Ammonium nitrate, original solution (100% NH_4NO_3) (2873150)		Nitrogen solutions (100% N) (2873165, 166, 167, and 173)	
	1988	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988	198
United States....	7,990,947	7,225,127	16,821,409	16,097,709	11,677,087	10,618,566	7,914,075	7,433,423	7,503,755	6,546,683	2,901,879	2,384,54
California.....	337,218	306,181	(D)	(D)	(D)	(D)	(D)	(D)	260,741	237,917	229,200	200,12
Florida.....	756,206	690,817	(D)	(D)	6,929,002	6,198,579	(D)	(D)	(D)	(D)	(D)	(D
Georgia.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	213,225	211,75
Illinois.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D
Iowa.....	(D)	(D)	716,562	369,558	–	–	(D)	(D)	(D)	(D)	(D)	(D
Louisiana.....	913,784	819,331	6,727,096	6,767,803	(D)	(D)	2,436,305	2,381,741	(D)	(D)	(D)	(D
Missouri.....	411,670	420,476	–	–	(D)	(D)	(D)	(D)	501,383	456,874	(D)	(D
Nebraska.....	(D)	(D)	(D)	(D)	–	–	(D)	(D)	(D)	(D)	194,290	167,91
Oklahoma.....	(D)	(D)	2,357,209	2,319,754	–	–	(D)	(D)	(D)	(D)	(D)	(D
Tennessee.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	–	
Texas.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	–	
All other states.....	2,985,883	2,602,646	4,331,484	4,113,970	2,528,783	2,113,064	3,002,255	2,684,413	3,006,707	2,576,444	723,492	556,87

Geographic area	Normal and enriched superphosphates (100% P_2O_5) (2874215)		Concentrated superphosphates (100% P_2O_5) (2874241)		Monoammonium phosphates (100% P_2O_5) (2874251)		Diammonium phosphates (100% P_2O_5) (2874252)		Other ammonium phosphates (100% P_2O_5) (2874255 and 61)	
	1988	1987	1988	1987	1988	1987	1988	1987	1988	198
United States....	69,873	64,607	944,898	936,010	1,086,773	949,590	5,757,351	5,058,845	111,060	r96,44
California.....	–	–	–	–	–	–	–	–	(D)	(D
Florida.....	–	–	(D)	(D)	565,146	503,122	3,904,962	3,229,941	–	
Georgia.....	33,959	23,872	–	–	–	–	–	–	–	
Illinois.....	–	–	–	–	(D)	(D)	(D)	(D)	(D)	(D
Louisiana.....	–	–	–	–	(D)	(D)	(D)	(D)	–	
Missouri.....	(D)	(D)	–	–	–	–	–	–	(D)	(D
Nebraska.....	–	–	–	–	–	–	–	–	–	(D
South Carolina.....	(D)	(D)	–	–	–	–	–	–	–	
Tennessee.....	–	(D)	–	–	–	–	–	–	–	
Texas.....	(D)	(D)	–	–	(D)	r(D)	(D)	(D)	–	(D
All other states.....	21,593	16,393	(D)	(D)	211,194	r204,701	613,805	395,939	65,936	r64,

– Represents zero. (D) Data withheld to avoid disclosing figures for individual companies. rRevised by 5 percent or more from previously published figures.

Table 5. TOTAL SHIPMENTS (INCLUDING INTERPLANT TRANSFERS) OF SULFURIC ACID, BY STATES: 1988 AND 1987

(Quantity in thousands of short tons of 100% H_2SO_4; value in thousands of dollars)

State	1988		1987	
	Quantity	Value	Quantity	Value
United States	11,606.4	615,348	11,266.1	561,639
Arizona	1,218.0	29,057	1,149.7	21,819
California	738.8	52,026	773.1	53,090
Florida	451.2	20,539	372.2	16,988
Illinois	(D)	(D)	335.7	r17,325
Louisiana	1,905.9	121,208	1,654.7	108,415
New Jersey	361.0	24,502	408.2	25,715
Ohio	370.2	23,541	409.3	25,629
Texas	1893.2	117,399	1,641.3	99,253
Virginia	(D)	(D)	(D)	(D)
Washington	(D)	(D)	(D)	(D)
Other states	4,233.2	194,862	4,319.4	174,153

(D) Data withheld to avoid disclosing figures for individual companies. rRevised by 5 percent or more from previously published figures.

Table 6. PRODUCTION OF NEW SULFURIC ACID, BY STATES: 1988 AND 1987

(Thousands of short tons of 100% H_2SO_4)

State	1988[1]	1987[1]
United States	39,563.0	36,644.0
Arizona	1,345.7	1,199.7
California	654.0	r526.0
Florida	18,635.0	16,593.9
Illinois	(D)	r512.5
Louisiana	5,384.4	r5,350.0
Missouri	(D)	(D)
New Jersey	401.8	478.9
New Mexico	(D)	(D)
Ohio	375.2	r393.3
Oklahoma and Texas	2,039.7	r1,870.3
Virginia	(D)	(D)
Washington	(D)	(D)
Other states	8,749.8	r7,936.5

(D) Data withheld to avoid disclosing figures for individual companies. rRevised by 5 percent or more from previously published figures.

[1]Includes data for Government-owned, privately-operated plants.

Table 7. PRIMARY PRODUCTION OF INORGANIC FERTILIZER CHEMICALS, BY MONTHS: 1988 AND 1987

(Short tons)

Product code	Product description	Year	Total	January	February	March	April	May	June	July	August	September	October	November	December
	Ammonia, synthetic anhydrous (100% NH_3):														
	Production	1988	16,821,409	1,399,201	1,294,917	1,444,967	1,464,642	1,503,161	1,385,059	1,433,184	1,378,843	1,279,776	1,337,210	1,390,586	1,509,863
		1987	16,097,709	1,374,486	1,252,027	1,442,362	1,418,367	1,410,815	1,306,778	1,264,007	1,201,909	1,233,239	1,397,428	1,351,903	1,444,388
	Stocks on hand, end of month	1988	(NA)	1,482,388	1,723,073	1,727,555	1,192,536	1,086,415	978,127	1,067,776	921,128	982,061	1,021,327	1,026,845	1,240,798
		1987	(NA)	1,949,694	2,143,942	2,097,669	1,167,606	1,021,735	854,374	972,317	983,101	1,004,652	1,141,209	1,213,060	1,281,046
28731 30	Fertilizer use:														
	Production	1988	15,287,823	1,264,294	1,168,663	1,316,936	1,334,644	1,378,452	1,260,489	1,297,932	1,272,282	1,158,021	1,216,112	1,249,014	1,370,984
		1987	14,621,355	1,243,578	1,135,214	1,312,322	1,286,127	1,299,864	1,183,323	1,147,465	1,092,276	1,107,328	1,263,796	1,223,333	1,326,729
	Stocks on hand, end of month	1988	(NA)	1,432,840	1,671,008	1,681,176	1,148,641	1,051,516	935,100	1,020,479	878,424	935,742	987,841	971,699	1,186,149
		1987	(NA)	1,913,329	2,105,999	2,062,838	1,127,796	984,629	809,579	923,505	939,032	958,131	1,085,983	1,156,434	1,234,550
28731 32	Other uses:														
	Production	1988	1,533,586	134,907	126,254	128,031	129,998	124,709	124,570	135,252	106,561	121,755	121,098	141,572	138,879
		1987	1,476,354	130,908	116,813	130,040	132,240	110,951	123,455	116,542	109,633	125,911	133,632	128,570	117,659
	Stocks on hand, end of month	1988	(NA)	49,548	52,065	46,379	43,895	34,899	43,027	47,297	42,704	46,319	33,486	55,146	54,649
		1987	(NA)	36,365	37,943	34,831	39,810	37,106	44,795	48,812	44,069	46,521	55,226	56,626	46,496
	Ammonium nitrate (100% NH_4NO_3):														
28731 50	Original solution:[1]														
	Production	1988	7,503,755	602,451	609,495	675,256	670,922	657,643	579,852	594,709	597,086	544,524	620,211	656,329	695,277
		1987	6,546,683	542,838	540,798	640,794	645,896	592,837	508,146	470,392	394,938	466,615	566,132	570,929	606,368
	Stocks on hand, end of month	1988	(NA)	174,670	150,399	108,986	95,726	68,332	73,642	104,801	115,984	110,361	120,550	113,802	94,808
		1987	(NA)	244,192	204,907	198,899	165,744	133,397	r139,921	138,358	120,647	125,107	141,611	166,498	170,573
	Fertilizer use:														
28731 52	Solution produced for sale as such for direct application:														
	Production	1988	259,384	12,785	22,901	24,737	28,360	25,129	25,557	27,844	12,329	18,677	23,673	20,425	16,967
		1987	270,086	19,141	24,136	27,865	29,075	25,702	21,505	25,977	17,891	20,229	20,149	19,795	18,621
	Stocks on hand, end of month	1988	(NA)	32,145	19,959	14,111	14,267	10,512	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(NA)	(D)	42,291	43,816	46,437	35,580	29,208	29,146	(D)	39,971	44,296	49,959	42,489
28731 54	Solution produced for consumption in the manufacture of nitrogen solutions or other fertilizer materials:														
	Production	1988	3,148,856	216,935	206,571	222,479	217,424	215,064	175,367	210,526	222,754	184,688	213,460	516,469	547,119
		1987	2,619,463	178,578	190,982	219,235	254,165	263,970	181,709	183,880	176,185	202,407	246,274	245,747	276,331
	Stocks on hand, end of month	1988	(NA)	53,614	53,383	41,501	27,780	19,250	19,741	31,656	43,345	32,148	42,582	39,494	42,044
		1987	(NA)	49,867	50,668	49,745	48,631	40,959	r38,285	32,443	28,458	40,252	33,053	37,314	51,196
28731 51	Solid:														
	Production	1988	2,217,338	193,111	202,746	223,499	223,759	206,276	154,216	172,786	154,276	118,043	154,723	203,700	210,203
		1987	1,788,672	176,536	180,710	208,591	208,181	170,107	139,326	116,811	74,594	92,077	124,545	142,812	154,382
	Stocks on hand, end of month	1988	(NA)	176,043	147,055	87,311	58,024	51,183	50,066	75,054	95,021	85,928	71,854	86,128	119,606
		1987	(NA)	253,380	226,096	188,879	148,726	129,667	121,586	138,833	133,297	123,562	135,294	154,320	144,176
28731 53	Explosives and other uses (solutions and solids):[2]														
	Production	1988	1,849,170	141,031	150,404	167,776	147,863	160,753	156,464	108,894	144,471	172,222	174,926	156,483	167,883
		1987	1,713,192	103,507	128,564	130,549	150,142	144,504	144,255	138,978	142,258	162,416	168,181	151,094	148,744
	Stocks on hand, end of month	1988	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
		1987	(NA)	(S)	(S)	(S)	r56,604	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
	Ammonium sulfate (100% $(NH_4)_2SO_4$):														
	Production	1988	2,332,777	181,016	191,042	199,807	186,309	209,919	171,256	188,092	189,456	187,168	212,360	206,557	209,795
		1987	2,189,075	182,813	186,154	183,330	183,864	193,213	159,625	187,371	182,641	179,461	181,946	187,338	181,319
	Stocks on hand, end of month	1988	(NA)	246,205	246,280	163,562	116,850	138,881	103,965	132,108	135,484	144,689	152,717	242,771	235,087
		1987	(NA)	215,268	172,987	165,241	129,248	219,106	174,662	217,006	242,606	221,374	213,093	240,774	274,561
28731 56	Synthetic:														
	Production	1988	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
	Stocks on hand, end of month	1988	(NA)	20,662	28,401	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(NA)	21,548	27,849	19,347	17,042	(D)	(D)	(D)	23,952	22,252	(D)	(D)	(D)
28731 58	Byproduct, other than coke oven:														
	Production	1988	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
	Stocks on hand, end of month	1988	(NA)	225,543	217,879	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(NA)	193,720	145,138	145,894	112,206	(D)	(D)	(D)	218,654	199,122	(D)	(D)	(D)

See footnotes at end of table.

Table 7. PRIMARY PRODUCTION OF INORGANIC FERTILIZER CHEMICALS, BY MONTHS: 1988 AND 1987--Continued

(Short tons)

Product code	Product description	Year	Total	January	February	March	April	May	June	July	August	September	October	November	December
28731 11	Nitric acid (100% HNO_3):														
	Production	1988	7,990,947	662,595	654,048	740,681	714,785	693,617	626,587	634,827	644,700	583,053	641,969	669,656	724,429
		1987	7,225,127	603,332	559,583	682,692	664,378	620,629	578,914	530,078	470,178	561,398	639,852	640,016	674,077
	Stocks on hand, end of month	1988	(NA)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
		1987	(NA)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
28731 55	Nitrogen solutions (including mixtures containing urea) (100% N):														
	Production	1988	2,901,879	233,766	214,893	235,019	265,474	261,414	211,389	229,150	233,464	223,712	252,731	258,752	282,115
		1987	2,384,548	202,632	205,085	205,539	244,397	239,443	164,162	180,541	147,996	162,114	199,840	211,999	220,800
	Stocks on hand, end of month	1988	(NA)	397,898	390,757	377,729	336,749	349,489	341,129	387,927	381,738	342,899	319,568	336,735	401,031
		1987	(NA)	641,951	665,657	655,004	613,893	511,794	363,977	409,588	415,957	408,798	423,399	391,663	344,727
28731 65	Solutions containing ammonia:[3].														
	Production	1988	169,636	8,784	17,177	13,089	15,782	15,669	13,111	14,494	14,268	15,575	15,176	13,495	13,016
		1987	143,260	16,578	18,405	17,625	19,537	14,440	15,088	13,111	6,173	5,498	6,246	5,948	4,611
	Stocks on hand, end of month	1988	(NA)	41,198	26,566	26,355	20,401	17,777	18,812	18,763	18,938	18,984	24,813	30,163	23,378
		1987	(NA)	138,112	142,440	137,372	[4]139,409	[4]134,974	(S)	(S)	(S)	30,309	37,533	38,081	32,372
28731 66	Solutions containing ammonium nitrate/ urea:														
	Production	1988	2,732,243	224,982	197,716	221,930	249,692	245,745	198,278	214,656	219,196	208,137	237,555	245,257	269,099
		1987	2,241,288	186,054	186,680	187,914	224,860	225,003	149,074	167,430	141,823	156,616	193,594	206,051	216,189
	Stocks on hand, end of month	1988	(NA)	356,700	364,191	351,374	316,348	331,712	322,317	369,164	362,800	323,915	294,755	306,572	377,653
		1987	(NA)	503,839	523,217	517,632	474,484	376,820	309,153	347,116	388,689	378,489	385,866	353,582	312,355
28731 73	Solutions containing ammonium nitrate/ calcium nitrate:														
	Production	1988	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
		1987	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
	Stocks on hand, end of month	1988	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
		1987	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
28731 67	All other two-component products:														
	Production	1988	-	-	-	-	-	-	-	-	-	-	-	-	-
		1987	-	-	-	-	-	-	-	-	-	-	-	-	-
	Stocks on hand, end of month	1988	(NA)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
		1987	(NA)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
28741 --	Phosphoric acid (100% P_2O_5):														
	Production	1988	11,677,087	929,369	965,898	1,004,650	1,002,460	958,892	887,634	944,097	979,950	951,066	1,013,322	965,969	1,073,780
		1987	10,618,566	804,849	799,870	913,658	964,322	858,484	790,476	820,044	912,425	906,867	956,697	910,440	980,434
	Stocks on hand, end of month	1988	(NA)	233,208	205,546	200,839	198,279	231,981	238,837	227,286	232,648	240,628	222,124	204,436	209,311
		1987	(NA)	276,307	229,024	227,270	253,100	239,369	252,515	237,884	237,978	219,538	233,955	229,036	215,465
28741 81	Thermal:														
	Production	1988	617,674	48,265	51,449	57,345	55,572	54,362	47,307	46,486	51,924	49,080	55,191	48,709	51,984
		1987	614,352	45,523	46,326	57,917	58,754	51,079	53,293	50,538	48,092	50,572	47,475	55,051	49,732
	Stocks on hand, end of month	1988	(NA)	12,909	12,470	10,692	11,141	9,386	11,022	11,774	12,698	10,909	12,688	11,578	13,090
		1987	(NA)	18,064	12,933	12,564	13,714	10,566	13,101	14,670	15,143	12,298	9,827	12,250	12,646
28741 85	Wet:														
	Production	1988	11,059,413	881,104	914,449	947,305	946,888	904,530	840,327	897,611	928,026	901,986	958,131	917,260	1,021,796
		1987	10,004,214	759,326	753,544	855,741	905,568	807,405	737,183	769,506	864,333	856,295	909,222	855,389	930,702
	Stocks on hand, end of month	1988	(NA)	220,299	193,076	190,147	187,138	222,595	227,815	215,512	219,950	229,719	209,436	192,858	196,221
		1987	(NA)	258,243	216,091	214,706	239,386	228,803	239,414	223,214	222,835	207,240	224,128	216,786	202,819
	By use:														
28741 86	Fertilizer:														
	Production	1988	10,632,237	(D)	880,456	914,438	914,699	869,839	799,881	860,619	(D)	862,125	926,340	874,225	979,824
		1987	9,597,795	729,843	(D)	(D)	879,043	773,523	709,966	731,452	821,468	823,663	871,022	820,250	885,380
	Stocks on hand, end of month	1988	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
28741 87	Feed and other:														
	Production	1988	427,176	(D)	33,993	32,867	32,189	34,691	40,446	36,992	(D)	39,861	31,791	43,035	41,972
		1987	406,419	29,483	(D)	(D)	26,525	33,882	27,217	38,054	42,865	32,632	38,200	35,139	45,322
	Stocks on hand, end of month	1988	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)

See footnotes at end of table.

Table 7. PRIMARY PRODUCTION OF INORGANIC FERTILIZER CHEMICALS, BY MONTHS: 1988 AND 1987--Continued

(Short tons)

Product code	Product description	Year	Total	January	February	March	April	May	June	July	August	September	October	November	December
	Phosphoric acid (100% P_2O_5)--Continued														
	Wet--Continued														
	By grade:														
28741 88	Ortho (less than 65% P_2O_5):														
	Production	1988	9,367,566	787,563	774,402	813,292	823,882	775,922	716,459	770,904	782,606	745,032	803,042	761,711	812,751
		1987	8,456,053	649,916	633,716	719,423	767,539	688,019	624,987	652,605	745,892	728,165	774,484	725,977	745,330
	Stocks on hand, end of month	1988	(NA)	167,923	139,566	(D)	(D)	161,112	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
28741 89	Super (more than 65% P_2O_5):														
	Production	1988	1,691,847	93,541	140,047	134,013	123,006	128,608	123,868	126,707	145,420	156,954	155,089	155,549	209,045
		1987	1,548,161	109,410	119,828	136,318	138,029	119,386	112,196	116,901	118,441	128,130	134,738	129,412	185,372
	Stocks on hand, end of month	1988	(NA)	(S)	(S)	(D)	(D)	(S)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
28732 --	Urea (100% urea):														
	Production	1988	7,914,075	649,355	628,996	692,690	678,038	701,593	590,506	630,623	653,361	621,804	679,127	674,562	713,420
		1987	7,433,423	630,549	584,100	691,083	681,613	649,716	559,780	518,220	493,255	611,862	644,803	631,132	737,310
	Stocks on hand, end of month	1988	(NA)	281,807	341,727	333,463	313,797	391,000	356,814	366,000	315,357	236,559	242,689	259,821	368,779
		1987	(NA)	496,514	515,545	462,736	391,579	500,060	459,054	493,996	493,005	500,203	483,006	467,293	400,168
	For fertilizer use:														
28732 16	Solutions produced as intermediate in nitrogen solutions:														
	Production	1988	2,609,761	201,244	210,457	241,714	240,175	234,714	181,663	198,645	237,686	183,506	214,279	227,196	238,482
		1987	2,470,828	188,405	182,546	228,611	232,206	216,385	182,593	150,619	161,292	222,155	231,847	221,739	252,430
	Stocks on hand, end of month	1988	(NA)	382	451	417	395	490	379	467	412	396	461	488	528
		1987	(NA)	750	313	389	325	427	297	295	383	429	397	373	391
28732 18	Solid:														
	Production	1988	4,408,902	375,835	362,793	384,813	375,796	401,464	349,425	378,341	326,299	337,540	378,044	350,591	387,961
		1987	4,139,545	385,571	355,613	407,667	401,954	385,418	322,880	317,985	248,487	295,835	334,422	321,399	362,314
	Stocks on hand, end of month	1988	(NA)	257,133	323,389	317,450	299,130	370,713	339,299	344,351	296,765	223,374	223,804	231,636	340,691
		1987	(NA)	485,375	504,128	449,734	382,458	492,025	450,961	484,947	459,218	469,179	460,201	439,066	365,391
	Other uses:														
28732 21	Feed (solid and solution):														
	Production	1988	372,038	35,342	21,293	24,361	24,496	24,953	26,557	27,639	56,062	30,940	28,940	34,370	37,085
		1987	308,518	(D)	(D)	19,983	15,607	14,845	21,689	26,902	23,442	26,050	30,899	31,271	43,819
	Stocks on hand, end of month	1988	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
28732 22	All other (solid and solution):														
	Production	1988	523,374	36,934	34,453	41,802	37,571	40,462	32,861	25,998	33,314	69,818	57,864	62,405	49,892
		1987	514,532	(D)	(D)	34,822	31,846	33,068	32,618	22,714	60,034	67,822	47,635	56,723	78,747
	Stocks on hand, end of month	1988	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1987	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)

Note: The 1988 and 1987 monthly stocks on hand, end of month were originally published in the monthly Current Industrial Report Series, M288, "Inorganic Fertilizer Materials and Related Products".

The percent of estimation of each item is indicated as follows (see "Description of Survey" in the text for a discussion of estimation of missing reports): #20 percent or more of this item is estimated.

- Represents zero. (D) Data withheld to avoid disclosing figures for individual companies. (NA) Not available. (S) Suppressed. Data did not meet publication standards of the Bureau of the Census. (X) Not applicable.

[1] Represents total amount of original solution produced, including amounts used for fertilizer, explosive, and other uses and amounts consumed in manufacturing other products, such as nitrogen solutions (product code 28731 55).

[2] Excludes data for Government-owned, privately operated plants.

[3] In 1988 and 1987, "Solutions containing ammonium nitrate/calcium nitrate" and "All other two-component products are combined with "Solutions containing ammonia" to avoid disclosing figures for individual companies.

Table 8. PRODUCTION, SHIPMENTS, AND STOCKS OF SUPERPHOSPHATES AND OTHER PHOSPHATIC FERTILIZER MATERIALS, BY MONTH: 1988 AND 1987

(Short tons)

Product code	Product description	Year	Total	January	February	March	April	May	June	July	August	September	October	November	December
28742 --	Superphosphates and other phosphatic fertilizer materials:														
	Production (100% P_2O_5)	1988	7,969,955	634,030	639,709	654,491	647,478	594,401	578,572	639,430	677,964	656,337	756,199	718,186	773,158
		1987	7,125,497	537,613	527,178	593,047	631,138	566,473	523,476	553,476	667,168	658,632	652,547	599,185	615,564
	Shipments, including interplant transfers (100% P_2O_5)	1988	7,814,459	589,647	624,729	709,764	618,007	508,295	609,722	618,542	717,852	659,939	790,803	660,713	706,446
		1987	7,148,246	565,642	583,974	635,805	608,913	407,133	563,834	531,102	675,911	709,641	602,151	542,921	658,219
	Stocks on hand, end of month (gross weight)	1988	(NA)	749,727	761,703	580,706	619,621	780,402	690,345	726,235	727,856	569,839	602,158	748,934	879,412
		1987	(NA)	671,213	510,987	400,686	420,263	631,851	551,709	616,474	615,096	538,987	670,870	831,506	703,619
28742 15	Normal and enriched superphosphates:														
	Production (100% P_2O_5)	1988	69,873	6,464	6,865	7,740	8,131	7,732	5,352	2,859	4,609	3,687	4,251	5,858	6,325
		1987	64,607	4,526	5,793	6,000	6,066	5,729	3,490	2,763	5,214	3,678	6,857	7,298	7,193
	Shipments, including interplant transfers (100% P_2O_5)	1988	20,875	1,616	2,322	2,197	2,534	2,299	(D)	(D)	(D)	708	1,036	1,950	(D)
		1987	21,758	2,042	2,416	2,791	3,534	2,804	1,621	951	596	420	558	1,376	2,449
	Stocks on hand, end of month (gross weight)	1988	(NA)	21,442	23,179	17,859	12,554	11,592	13,817	14,279	20,416	18,147	16,567	17,897	14,223
		1987	(NA)	40,827	40,256	35,361	21,219	18,228	15,242	17,495	20,527	20,238	25,328	21,228	14,441
28742 41	Concentrated superphosphates (triple) (over 40% P_2O_5):														
	Production (100% P_2O_5)	1988	944,898	80,282	82,590	83,087	81,850	74,810	68,609	82,772	84,664	77,169	91,865	66,263	70,937
		1987	956,010	77,398	82,247	85,364	92,627	84,856	80,172	79,566	74,667	75,775	80,817	72,240	70,281
	Shipments, including interplant transfers (100% P_2O_5)	1988	939,415	77,665	84,446	98,259	72,261	57,381	95,264	79,138	79,680	83,750	83,935	64,809	62,827
		1987	947,552	77,333	85,844	77,962	85,900	52,869	89,366	69,649	89,586	85,269	90,185	64,012	79,577
	Stocks on hand, end of month (gross weight)	1988	(NA)	114,209	110,525	75,420	98,503	139,360	75,297	103,405	115,988	87,324	103,529	105,095	122,136
		1987	(NA)	136,234	108,915	98,498	85,401	147,896	128,134	156,825	122,462	109,071	97,904	125,009	109,404
	Ammonium phosphates:														
28742 51	Monoammonium phosphates:														
	Production (100% P_2O_5)	1988	[1]1,086,773	[2]94,519	82,209	102,976	102,189	[2]89,862	[2]71,805	[2]81,944	91,298	86,209	82,309	88,128	[2]132,483
		1987	[1]949,590	52,220	95,859	101,535	117,108	[2]70,322	[2]47,450	[2]63,040	83,435	93,377	93,821	67,226	84,773
	Shipments, including interplant transfers (100% P_2O_5)	1988	1,068,516	[2]77,959	79,603	111,336	102,294	76,955	77,898	90,040	105,201	83,303	82,372	78,039	103,516
		1987	[1]947,057	[2]80,311	77,254	119,878	108,441	59,506	41,417	52,208	[2]87,535	93,722	83,841	92,086	66,601
	Stocks on hand, end of month (gross weight)	1988	(NA)	93,393	98,745	79,124	82,380	107,618	98,946	84,137	78,375	82,752	92,005	94,954	120,260
		1987	(NA)	54,532	95,100	54,500	64,039	63,654	66,923	76,675	79,495	80,167	93,447	45,518	70,705
28742 52	Diammonium phosphates:														
	Production (100% P_2O_5)	1988	5,757,351	452,765	452,300	452,490	443,070	410,371	427,684	469,214	488,538	483,104	569,215	545,187	563,413
		1987	5,058,845	391,767	338,515	391,451	401,572	405,566	392,364	408,107	496,381	480,191	463,764	446,018	443,149
	Shipments, including interplant transfers (100% P_2O_5)	1988	5,677,371	423,913	448,013	487,252	426,636	360,425	430,934	444,876	523,805	484,287	614,780	505,006	527,444
		1987	5,138,663	405,956	412,149	424,171	391,812	345,956	427,683	405,373	498,194	520,055	421,198	381,064	505,052
	Stocks on hand, end of month (gross weight)	1988	(NA)	492,914	490,659	379,300	705,530	503,172	477,076	496,221	469,671	350,604	361,161	485,663	559,255
		1987	(NA)	386,995	233,403	183,865	224,595	369,824	311,567	335,104	365,652	311,001	[4]435,218	616,571	472,420
28742 55 61	Other ammonium phosphates and other phosphatic fertilizer materials):[3]														
	Production (100% P_2O_5)	1988	[4]111,060	(2)	15,745	8,198	12,238	11,626	5,122	2,641	8,855	6,168	8,559	12,750	(2)
		1987	[4]r96,445	11,702	4,764	8,697	13,765	(2)	(2)	(2)	7,471	5,611	7,288	6,403	10,168
	Shipments, including interplant transfers[1] (100% P_2O_5)[3]	1988	[4]108,282	8,494	10,345	10,720	14,282	11,235	(D)	(D)	(D)	7,891	8,680	10,909	(D)
		1987	[4]r93,216	(2)	6,311	11,003	19,226	8,998	3,747	2,921	(2)	9,975	6,369	4,383	4,540
	Stocks on hand, end of month (gross weight)[3]	1988	(NA)	27,769	38,595	29,003	20,654	18,660	25,209	28,193	43,406	31,012	28,896	45,325	63,538
		1987	(NA)	52,625	33,313	28,462	25,009	32,249	29,843	30,375	26,960	18,510	18,973	23,180	36,679

Note: The 1988 and 1987 monthly stocks on hand, end of month were originally published on the monthly, M28B "Inorganic Fertilizer Materials and Related Products", Current Industrial Report Series.

The percent of estimation of each item is indicated as follows (see "Description of Survey" in the text for a discussion of estimation of missing reports): [4]20 percent or more of this item is estimated.

(D) Data withheld to avoid disclosing figures for individual companies. (NA) Not available. [r]Revised by 5 percent or more from previously published figures.

[1]Total production and shipments figures for 1987 and 1988 strictly represent 12 months of data for "Monoammonium phosphates". It excludes "Other ammonium phosphates" and "Other phosphatic fertilizer materials".
[2]"Other ammonium phosphates" (28742 55) and "Other phosphatic fertilizer materials" (28742 61) are combined with "Monoammonium phosphates" (28742 51) to avoid disclosing figures for individual companies.
[3]"Other ammonium phosphates" (28742 55) is combined with "Other phosphatic fertilizer materials" (28742 61) to avoid disclosure of figures for individual companies.
[4]Total production and shipments figures for "Other ammonium phosphates and other phosphatic fertilizer materials" represent 12 months of data for these two combined categories.

Table 9. PRODUCTION AND STOCKS OF SULFURIC ACID, BY PROCESS, BY MONTH: 1988 AND 1987

(Thousands of short tons of 100% H_2SO_4)

Month and year	Production				Sulfuric acid produced through decomposition	Spent acid used in fortification[2]	Stocks (gross) at producing plants at end of period
	Sulfuric acid, gross, new and fortified						
	Total	Oleum grades	Other than oleum grades	New acid[1]			
1988							
Total	42,140.8	1,670.9	40,469.9	39,563.0	2,407.3	170.5	691.9
January	3,357.1	141.1	3,216.0	3,144.2	198.4	14.5	700.8
February	3,299.2	131.4	3,167.8	3,115.3	171.8	12.1	644.7
March	3,519.7	153.1	3,366.6	3,303.1	200.4	16.2	687.1
April	3,583.5	134.1	3,449.4	3,364.8	202.5	16.2	739.7
May	3,519.0	150.5	3,368.5	3,295.6	207.8	15.6	767.6
June	3,308.5	134.3	3,174.2	3,096.7	197.2	14.6	787.4
July	3,438.6	122.6	3,316.0	3,224.6	203.6	10.4	773.5
August	3,520.6	131.0	3,389.6	3,299.3	209.0	12.3	764.0
September	3,413.7	131.6	3,282.1	3,194.1	207.9	11.7	654.3
October	3,644.1	145.7	3,498.4	3,422.7	204.4	17.0	660.4
November	3,646.5	152.7	3,493.8	3,442.0	189.0	15.5	707.4
December	3,890.3	142.8	3,747.5	3,660.6	215.3	14.4	691.9
1987							
Total	39,256.4	1,641.1	37,615.3	36,644.0	2,431.8	180.6	689.3
January	2,992.7	126.1	2,866.6	2,808.5	169.6	14.6	830.9
February	2,850.8	124.5	2,726.3	2,683.1	150.5	17.2	785.5
March	3,353.2	145.5	3,207.7	3,140.9	195.3	17.0	755.5
April	3,427.6	130.1	3,297.5	3,201.4	208.3	17.9	702.7
May	3,227.5	145.5	3,082.0	3,004.3	206.8	16.4	734.2
June	3,001.2	109.0	2,892.2	2,771.5	211.3	18.4	815.4
July	3,142.2	150.1	2,992.1	2,910.2	219.3	12.7	683.8
August	3,472.6	143.4	3,329.2	3,230.3	231.7	10.6	700.9
September	3,397.0	137.3	3,259.7	3,169.1	218.8	9.1	644.3
October	3,487.3	157.2	3,330.1	3,252.4	219.6	15.3	685.2
November	3,279.9	127.0	3,152.9	3,072.5	192.7	14.7	659.0
December	3,624.4	145.4	3,479.0	3,399.8	207.9	16.7	689.3

Note: Detail may not add to total due to independent rounding.

[1] Represents gross production of sulfuric acid less acid produced through decomposition and spent acid used in fortification.
[2] Spent acid fortified by the addition of sulfur trioxide.

Table 10. PRODUCTION, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION OF INORGANIC FERTILIZER CHEMICALS: 1988 AND 1987

(Quantity in short tons; value in thousands of dollars)

Product code	Product description	Production (quantity)	Exports of domestic merchandise[1]		Percent exports to production (quantity)	Imports for consumption[2]		Apparent consumption[4] (quantity)	Percent imports to apparent consumption (quantity)
			Quantity	Value		Quantity	Value[3]		
	1988								
28731 30 28731 32	Ammonia, synthetic anhydrous, fertilizer use	15,287,823	780,539	(NA)	5.1	3,645,041	350,654	18,152,325	20.1
28731 50	Ammonium nitrate, original solution	7,503,755	90,335	(NA)	1.2	395,138	33,048	7,808,558	5.1
28731 65 28731 66 28731 67 28731 73	Nitrogen solutions	2,901,879	713,833	(NA)	24.6	586,409	46,625	2,774,455	21.1
28731 56 28731 58	Ammonium sulfate	2,332,777	872,241	(NA)	37.4	371,333	27,358	1,831,869	20.3
28732 —	Urea	7,914,075	1,065,551	(NA)	13.5	2,223,792	229,635	9,072,316	24.5
28741 —	Phosphoric acid	11,677,087	(D)	(NA)	(D)	13,009	4,567	(D)	(D)
28742 15	Normal and enriched superphosphate[5]	69,873	14,112	(NA)	(NA)	415	69	(NA)	(NA)
28742 41	Concentrated superphosphate[5]	944,898	1,010,484	(NA)	(NA)	116,172	17,270	(NA)	(NA)
28742 52	Diammonium phosphates[5]	5,757,351	6,562,830	(NA)	(NA)	10,816	2,429	(NA)	(NA)
28742 51	Monoammonium phosphates[5]								
28742 55	Other ammonium phosphates[5]	1,197,833	861,788	(NA)	(NA)	109,582	17,957	(NA)	(NA)
28742 61	Other phosphatic fertilizer materials[5]								
28193 —	Sulfuric acid, gross	42,140,803	162,297	8,478	0.4	1,056,830	34,051	43,035,336	2.5
	1987								
28731 30 28731 32	Ammonia, synthetic anhydrous, fertilizer use	14,621,355	1,190,938	(NA)	8.1	2,830,176	262,744	16,260,593	17.4
28731 50	Ammonium nitrate, original solution	6,546,683	309,162	(NA)	4.7	306,855	30,846	6,544,376	4.7
28731 65 28731 66 28731 67 28731 73	Nitrogen solutions	2,384,548	777,708	(NA)	32.6	514,690	32,854	2,121,530	24.3
28731 56 28731 58	Ammonium sulfate	2,189,075	761,338	(NA)	34.8	285,169	20,929	1,712,906	16.6
28732 —	Urea	7,433,423	1,050,216	(NA)	14.1	2,500,986	222,277	8,884,193	28.2
28741 —	Phosphoric acid	10,618,566	(D)	(NA)	(D)	26,174	10,047	(D)	(D)
28742 15	Normal and enriched superphosphate[5]	64,607	414	(NA)	(NA)	3,279	676	(NA)	(NA)
28742 41	Concentrated superphosphate[5]	956,010	1,564,960	(NA)	(NA)	52,743	6,591	(NA)	(NA)
28742 52	Diammonium phosphates[5]	5,058,845	6,322,261	(NA)	(NA)	28,921	5,209	(NA)	(NA)
28742 51	Monoammonium phosphates[5]								
28742 55	Other ammonium phosphates[5]	1,046,035	616,246	(NA)	(NA)	124,567	19,404	(NA)	(NA)
28742 61	Other phosphatic fertilizer materials[5]								
28193 —	Sulfuric acid, gross	39,256,419	107,853	5,844	0.3	844,610	24,766	39,993,176	2.1

Note: For comparison of SIC product code numbers, TSUSA import numbers, and Schedule B export numbers, see table 11.

(D) Data withheld to avoid disclosing figures for individual companies. (NA) Not available.

[1] Source: Bureau of the Census report EM 546, U.S. Exports.
[2] Source: Bureau of the Census report IM 245, U.S. Imports for Consumption.
[3] This dollar value represents c.i.f. (cost, insurance, and freight) value at the first port of entry in the United States plus calculated import duty.
[4] Apparent consumption is derived by subtracting exports from manufactufers' production plus imports. Apparent consumption does not include any adjustments for changes in inventories.
[5] The "Superphosphates and other phosphatic fertilizer materials" production figures are collected and published on a 100% P_2O_5 basis, while the import and export figures are collected and published on a gross weight basis. Due to the difference on the basis, production, import and export data are not comparable.

Table 11. COMPARISON OF SIC PRODUCT CODE NUMBERS, TSUSA IMPORT NUMBERS, AND SCHEDULE B EXPORT NUMBERS

Product code	Import number	Export number	Product code	Import number	Export number
28731 30 28731 32	480.6540	480.6540	28741 —	416.3000 480.7010	416.3000 480.7015 480.7025
28731 50	417.3000 480.6510	417.3000 480.6510	28742 15	480.7030	480.7030
			28742 41	480.7050	480.7050
28731 65 28731 66 28731 67	480.6550	480.6550	28742 52	480.8005	480.8005
			28742 51 28742 55	480.8015	480.8010 480.8018
28731 56 28731 58	417.3800 480.6530	417.3800 480.6530	28742 61	480.7070	480.7075
28732 —	480.3000	480.3000	28193 00	416.3500	416.3500

DESCRIPTION OF SURVEY

Scope of Survey. This survey covers establishments producing inorganic fertilizer chemicals, phosphatic fertilizer materials, and sulfuric acid, except spent sulfuric acid recovered by hydrolysis or evaporation.

Survey Methodology. The statistics in this publication were collected by mail on Bureau of the Census annual Form MA28B, Inorganic Fertilizer Materials and Related Products. The survey panel includes all known producers of inorganic fertilizer materials, phosphatic fertilizer materials, and sulfuric acid, approximately 270 establishments.

Reliability of Data. Survey error may result from several sources: (1) inability to obtain information about all cases in the survey; (2) response errors; (3) definitional difficulties; (4) differences in the interpretation of questions; (5) mistakes in recording or coding the data obtained; and (6) other errors of collection, response, coverage, and estimation for missing data. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is due to imputing data for nonrespondents, for late reporters, and for data which failed logic edits. Missing figures are imputed based on yearly movements shown by reporting firms. Imputation generally is limited to a maximum of 5 percent for any one data cell. Figures with imputation rates greater than 5 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is not precisely known, but is assumed to be small. The degree of uncertainty regarding the accuracy of the published data, however, increases as the percentage of imputation increases. Figures with imputation rates above 5 percent should be used with caution.

Revisions to Previous Period Data. Statistics for previous years may be revised as the result of corrected data from respondents, including the receipt of late reports for which imputations were made as described above. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

Revisions may include changes to prior period data resulting from reconciliation of the results of this survey with the 1987 Census of Manufactures to correct differences in reported data between the two series and to identify and verify new establishments included in the scope of this survey.

Adjustment for Price Change. All dollar figures included in this publication are in current dollars; i.e., they have not been adjusted for price change.

EXPLANATION OF TERMS

Quantity and Value of Shipments. The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Shipments to a company's own branches are assigned the same value as comparable sales to unaffiliated customers; i.e., the value includes an appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

Production. Data shown for production represent total quantity of each product produced, including quantity consumed in the plant or sold or transferred to other plants or warehouses of the same company. Products produced under toll agreements are reported by the establishment which owns raw material from which the products are produced. The data provide a measure of total production, but do not necessarily indicate amounts entering the market since, in some cases, figures are included for material produced as an intermediate process in the production of other end products.

Consumption. Consumption data includes only quantities produced and consumed in the same plant.

Sulfuric Acid. Represents quantities produced from all sources which are available for sale except for the amounts recovered by processes other than fortification. Includes amounts produced from the oxidation of sulfur or sulfur bearing material and from the decomposition of spent acids. Excludes sulfuric acid recovered by hydrolysis and evaporation and intermediate production where sulfuric acid is not withdrawn from the system.

Spent Acid. Sulfuric acid that has been used in manufacturing processes, such as metal treating on crude oil processing, and is reduced in strength or purity. This includes sludge acid, alkylation acid, and other spent acids.

Fortified Spent Acid. Spent acid that has been strengthened by the addition of sulfur trioxide in contact units.

Decomposed Spent Acid. Spent acid, typically alkylation and sludge acids, that has been decomposed to sulfur dioxide through thermal processes.

Normal and Enriched Superphosphates. All grades containing less than 40 percent available phosphoric oxide (P_2O_5).

Concentrated (Triple) Superphosphates. Grades containing 40 percent or more phosphoric oxide (P_2O_5).

Ammonium Phosphates. Includes a group of nitrogen-phosphorous materials monoammonium phosphates and diammonium phosphates, mixtures of the two, or combinations with ammonium nitrate or ammonium sulfate. Ammonium polyphosphate is also included.

Monoammonium Phosphates. Chemically processed nitrogenphosphorus materials containing 50 percent or more primary nutrients and having a phosphate to nitrogen ratio of 3 to 1 or greater.

Diammonium Phosphates. Chemically processed nitrogenphosphorus materials comprising fertilizer grades containing 18 to 21 percent nitrogen (N), and 46 to 54 percent phosphoric oxide (P_2O_5).

Other Ammonium Phosphates. Chemically processed nitrogenphosphorus materials, solid and fluid, including mixtures of monoammonium, diammonium, and ammonium sulfate. Excludes ammonium phosphate produced in combination with potash salts to make a complete mixture.

Other Phosphatic Fertilizer Materials. Chemically processed materials such as ammonium phosphate potash mixtures, nitrophosphates, calcium metaphosphates, sodium phosphates, wet base goods made by treating phosphate rock and some organic nitrogenous material with sulfuric acid.

COMPARISON OF EXPORT, IMPORT, AND DOMESTIC OUTPUT DATA

The Standard Industrial Classification (SIC) system used for domestic output and the statistical export and import commodity classifications were developed independently. This results in considerable difficulty in comparing the three types of data for many commodity areas. The domestic output classification is based on type of industry; on the other hand, the export and import classification system is more materials oriented. Also, there are a substantial number of imported commodities which have no comparable domestic output classification. The relationships shown in this report should be considered only as approximations, since, in addition to the problems mentioned above, there are also the following problems affecting the comparability of the three sets of data.

Valuation. There are different methods of valuation for the three types of data:

- *Domestic Output.* Valued at the point of production. It includes the net sales price, f.o.b. plant, after discounts and allowances, exclusive of freight charges and excise taxes.
- *Exports.* Valued at the point of exportation. It includes the selling price, or cost if not sold, and inland freight, insurance and other charges to the export point.

  Estimated producers' values of exports have also been developed. These values more closely approximate the values reported for domestic output because they exclude freight, insurance, and other charges applied from the producing plant to the export point.
- *Imports.* Valued at the first port of entry in the United States. It includes c.i.f. (cost, insurance, and freight), duty, and other charges to the import point.

Duplication in Quantity and Value of Output. Because producers' shipments of some commodities may be used as materials for incorporation into other commodities, combinations of data for such commodities may contain a certain amount of duplication. Thus, percentages of exports to output or imports to apparent consumption (output plus imports minus exports) at four-digit or broader levels may be understated. Where duplication is known to be substantial, the output data are appropriately noted in the table.

Low-Value Import and Export Transactions. Detailed commodity information is not included for individual export shipments valued at not more than $1,500. Generally, detailed commodity information is not included for individual import shipments valued at not more than $1,000. For textiles and textile products, gloves, footwear, and miscellaneous rubber and plastic products, detailed commodity information is not included for individual import shipments valued at not more than $250. This is believed to have only negligible effects on the statistics for the bulk of the commodities.

Manufacturers' Shipments, Not Specified by Kind. The value of manufacturers' shipments at the four-digit industry level often includes a small amount which is not distributed among the individual five-digit product classes. Export and import percentages at the more detailed levels might, therefore, be slightly overstated.

Time Lag Between Output and Exports. There will be a lag between the time a commodity is produced or shipped by the producer and the time it is actually

exported, especially when intermediaries (wholesalers, exporters, etc.) are involved. Ordinarily, this type of discrepancy is insignificant in annual figures.

"Direct" vs "Total" Commodity Exports and Imports. Exports and import data do not include materials which are incorporated into other more finished products and exported or imported in finished form. Thus, by showing only direct exports and imports, the relation of exports to output and imports to apparent consumption for intermediate products is considerably understated.

Used Commodities. With a few exceptions, used or rebuilt commodities are classified in the same import or export codes as is new merchandise. Percentages are thus overstated to the extent that used or rebuilt products are significant in trade.

Geographic Area of Coverage. Import and export data reflect the movement of merchandise into and out of U.S. foreign trade zones, the U.S. Virgin Islands, and the U.S. customs territory (includes the 50 States, the District of Columbia, and Puerto Rico).

HISTORICAL NOTE

Data on inorganic fertilizer chemicals and sulfuric acid have been collected by the Bureau of the Census since 1941. Historical data may be obtained from Current Industrial Reports (called Facts for Industry before 1959) available at your local Federal Depository Library. A list of these libraries may be obtained from the Bureau of the Census regional offices:

Office	Telephone
Atlanta, Georgia	(404) 347-2271
Boston, Massachusetts	(617) 223-2327
Charlotte, North Carolina	(704) 371-6142
Chicago, Illinois	(312) 353-6251
Dallas, Texas	(214) 767-0621
Denver, Colorado	(303) 236-2200
Detroit, Michigan	(313) 226-7742
Kansas City, Kansas	(816) 374-4601
Los Angeles, California	(213) 209-6616
New York, New York	(212) 264-3860
Philadelphia, Pennsylvania	(215) 597-4920
Seattle, Washington	(206) 442-7828

Historical data are also available on microfiche. For further information contact the Bureau of the Census, Data User Services Division, (301) 763-4100.

RELATIONSHIP BETWEEN M28B AND MA28B

Data on production of inorganic fertilizer chemicals, phosphatic fertilizer materials, and sulfuric acid are published monthly in M28B, *Inorganic Fertilizer Materials and Related Products.* Although the product descriptions are the same on the monthly and annual surveys, the statistics shown in the annual report may differ from those published in the monthly report for the following reasons:

a. Figures supplied by the same company may differ for the two reports even though the product descriptions and reporting basis are the same.

b. The monthly figures received from many firms are estimated since book records are frequently not available. These data sometimes differ significantly from reported annual data for the same establishments.

c. For establishments reporting on the annual survey but not on the monthly, the monthly data are estimated. The sum of these monthly estimates may vary substantially from actual data.

Where these discrepancies between the monthly and annual figures occur, the monthly data are adjusted by a method which preserves the month-to-month trend while correcting the level. These revised monthly data are shown in tables 7 and 8.

RELATED REPORTS

The Bureau of the Census also publishes the following related reports:

Series	Frequency	Title
Current Industrial Reports		
M28A	Monthly	*Inorganic Chemicals*
M28B	Monthly	*Inorganic Fertilizer Materials and Related Products*
M28C	Monthly	*Industrial Gases*
MA28A	Annually	*Inorganic Chemicals*
MA28C	Annually	*Industrial Gases*
Other Industry Reports		
M3-1	Monthly	*Manufacturers' Shipments, Inventories, and Orders*
(AS)	Annually	Annual Survey of Manufactures (ASM)

Series	Frequency	Title
(MC)	Quin-quennially	Census of Manufactures
Foreign Trade Reports		
EM 546 FT 446	Monthly Annually	*U.S. Exports—Schedule B—Commodity by Country*
IM 146 FT 246	Monthly Annually	*U.S. Imports for Consumption—TSUSA—Commodity by Country*

CONTACTS FOR DATA USERS

Subject Area	Contact	Phone Number
Current Industrial Report MA28B	Gisela B. Hoffman	(301) 763-7807
Classification System Comparability	Francis McCormick (ESD)	(301) 763-1935
Foreign Trade	Trade Data Inquiries Staff (FTD)	(301) 763-5140
Census/ASM	Allen Foreman	(301) 763-5531
Industry and Trade Administration	Frank Maxey	(202) 377-0128
Department of Agriculture	Harry Vroomen	(202) 786-1456
To order a Current Industrial Report	Superintendent of Documents (GPO)	(202) 783-3238
To subscribe to a Census Bureau publication	Superintendent of Documents (GPO)	(202) 275-3054

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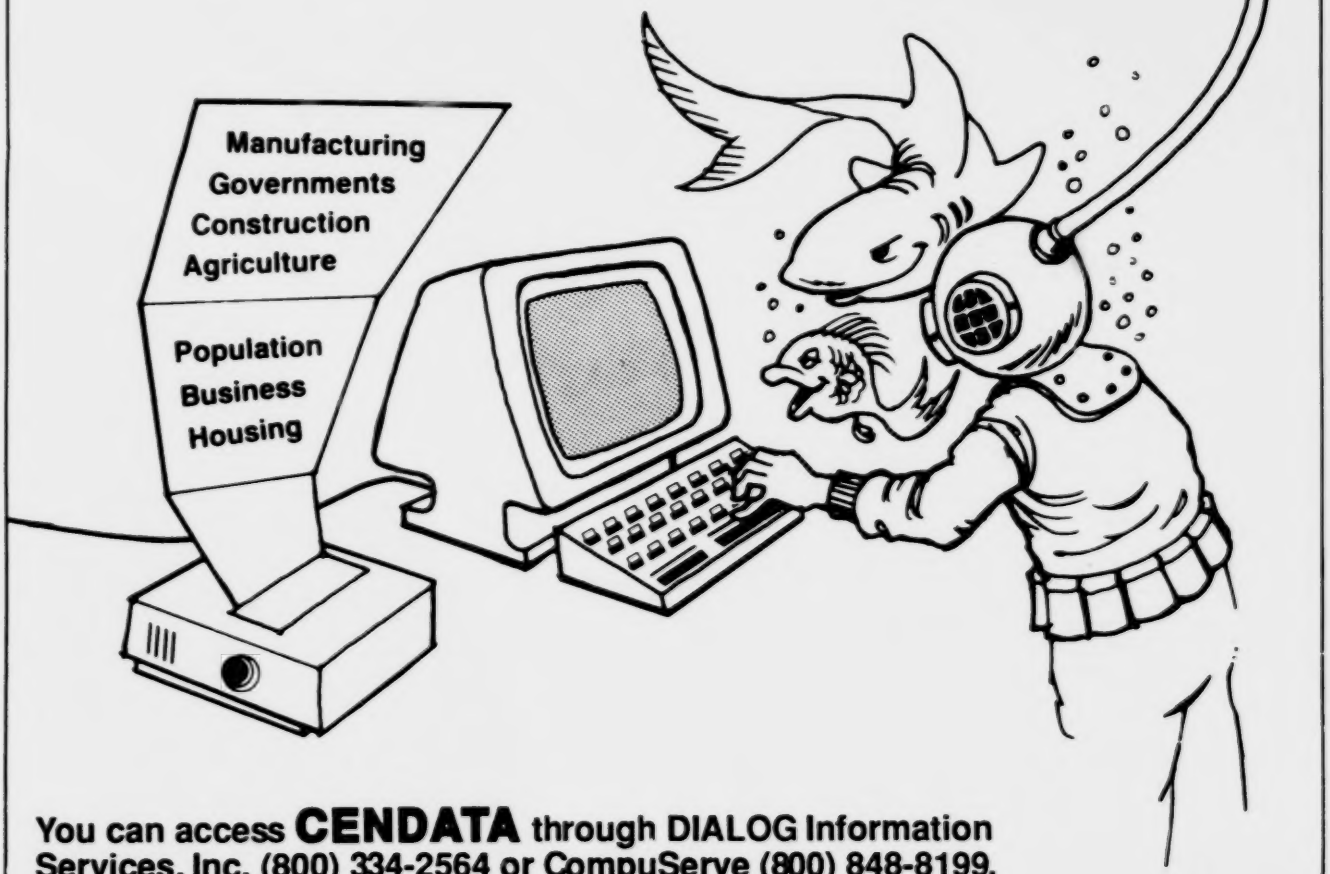

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